

In the Claims:

Please cancel claims 4 and 5. Please add new claims 25 and 26. The claims are as follows:

1. (Currently Amended) A phase lock loop circuit, comprising:

a first charge pump circuit, a second charge pump circuit, and a loop filter circuit within the phase lock loop circuit, the first charge pump circuit comprising a first adjustable gain control, the second charge pump circuit comprising a second adjustable gain control, the loop filter circuit comprising a filter capacitor with a constant capacitance value, the first charge pump circuit being electrically connected to the loop filter, the first charge pump circuit being adapted to control a flow of current for the loop filter, the loop filter being adapted to provide a voltage for a voltage controlled oscillator, the second charge pump circuit being electrically connected to the loop filter circuit in parallel with the filter capacitor, and the first charge pump circuit and the second charge pump circuit being adapted to collectively vary an effective capacitance value of the filter capacitor.

2. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit and the second charge pump circuit are further adapted to collectively vary a bandwidth of the phase lock loop circuit.

3. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit and the second charge pump circuit are further adapted to collectively vary a damping factor of the phase

lock loop circuit.

4. (Canceled)

5. (Canceled)

6. (Original) The phase lock loop circuit of claim 1, wherein the second charge pump circuit is adapted to source current to the filter capacitor.

7. (Original) The phase lock loop circuit of claim 1, wherein the second charge pump circuit is adapted to sink current from the filter capacitor.

8. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit and second charge pump circuit are further adapted to collectively reduce noise signals from an output signal of the phase lock loop circuit.

9. (Original) The phase lock loop circuit of claim 1, wherein the effective capacitance value of the filter capacitor is dependent upon a gain of the first charge pump circuit, a gain of the second charge pump circuit, and the constant capacitance value of the filter capacitor.

10. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit and the second charge pump circuit are further adapted to collectively vary a bandwidth and a

damping factor of the phase lock loop circuit simultaneously.

11. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit is adapted to source current to the loop filter circuit.

12. (Original) The phase lock loop circuit of claim 1, wherein the first charge pump circuit is adapted to sink current from the loop filter circuit.

13. (Currently Amended) A method for optimizing a phase lock loop circuit, comprising:

providing a first charge pump circuit, a second charge pump circuit, and a loop filter circuit within the phase lock loop circuit, the first charge pump circuit comprising a first adjustable gain control, the second charge pump circuit comprising a second adjustable gain control, the loop filter circuit comprising a filter capacitor with a constant capacitance value, the first charge pump circuit being electrically connected to the loop filter, and the second charge pump circuit being electrically connected to the loop filter circuit in parallel with the filter capacitor;

controlling, by the first charge pump circuit, a flow of current for the loop filter;

varying, by the first the first charge pump circuit and the second charge pump circuit, an effective capacitance value of the filter capacitor; and

providing, by the loop filter, a voltage for a voltage controlled oscillator.

14. (Original) The method of claim 13, further comprising varying, by the first the first charge

pump circuit and the second charge pump circuit, a bandwidth of the phase lock loop circuit.

15. (Original) The method of claim 13, further comprising varying, by the first the first charge pump circuit and the second charge pump circuit, a damping factor of the phase lock loop circuit.

16. (Currently Amended) The method of claim 13, further comprising varying by the second adjustable gain control, a gain of the second charge pump circuit.

17. (Currently Amended) The method of claim 16, further comprising varying by the first adjustable gain control, a gain of the first charge pump circuit.

18. (Original) The method of claim 13, further comprising sourcing, by the second charge pump circuit, a current flow to the filter capacitor.

19. (Original) The method of claim 13, further comprising sinking, by the second charge pump circuit, a current flow from the filter capacitor.

20. (Original) The method of claim 13, further comprising reducing, by the first the first charge pump circuit and the second charge pump circuit, noise signals from an output signal of the phase lock loop circuit.

21. (Original) The method of claim 13, wherein the effective capacitance value of the filter

capacitor is dependent upon a gain of the first charge pump circuit, a gain of the second charge pump circuit, and the constant capacitance value of the filter capacitor.

22. (Original) The method of claim 13, further comprising varying, by the first charge pump circuit and the second charge pump circuit, a bandwidth and a damping factor of the phase lock loop circuit simultaneously.

23. (Original) The method of claim 13, further comprising sourcing, by the first charge pump circuit, a current flow to the loop filter circuit.

24. (Original) The method of claim 13, further comprising sinking, by the second charge pump circuit, a current flow from the loop filter circuit.

25. (New) The phase lock loop circuit of claim 1, wherein the effective capacitance value of the filter capacitor is dependent upon a ratio of a gain of the first charge pump circuit with respect to a gain of the second charge pump circuit and the constant capacitance value of the filter capacitor.

26. (New) The method of claim 13, wherein the effective capacitance value of the filter capacitor is dependent upon a ratio of a gain of the first charge pump circuit with respect to a gain of the second charge pump circuit and the constant capacitance value of the filter capacitor.